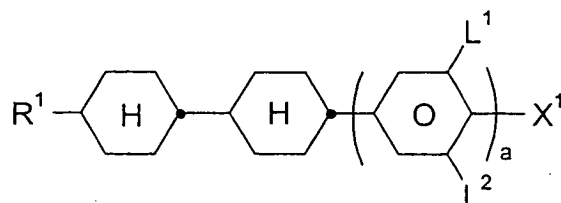
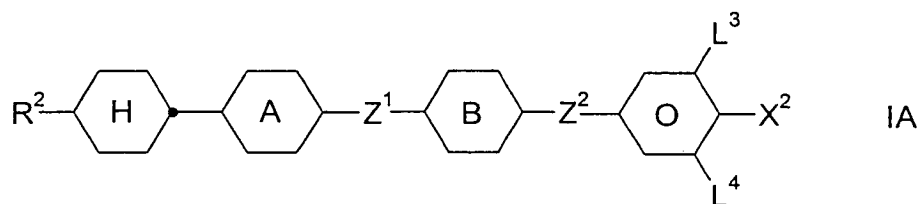


Patent Claims

1. Liquid-crystalline medium based on a mixture of polar compounds of positive dielectric anisotropy, characterised in that it comprises one or more compounds of the formula I



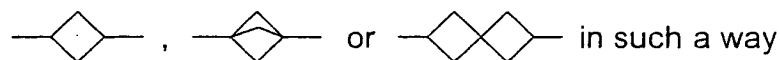
and one or more compounds of the formula IA



where the proportion of the compounds of the formula I in the medium is at least 18% by weight, and in which the individual radicals have the following meanings:

R^1 is an alkenyl radical having from 2 to 8 carbon atoms,

R^2 is H, an alkyl radical having from 1 to 15 carbon atoms which is halogenated, substituted by CN or CF_3 or unsubstituted, where, in addition, one or more CH_2 groups in these radicals may each, independently of one another, be replaced by $-C\equiv C-$, $-CO-$, $-CH=CH-$, $-O-$,



in such a way that O atoms are not linked directly to one another,

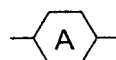
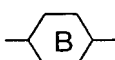
X^1 is an alkyl radical, alkenyl radical, alkoxy radical or alkenyloxy radical, each having up to 6 carbon atoms, in

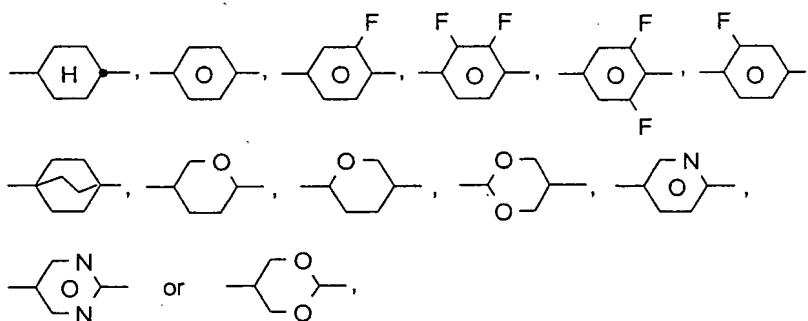
the case where $a = 1$ also F, Cl, CN, SF₅, SCN, NCS or OCN,

X^2 is F, Cl, CN, SF₅, SCN, NCS, OCN, a halogenated alkyl radical, halogenated alkenyl radical, halogenated alkoxy radical or halogenated alkenyloxy radical, each having up to 6 carbon atoms,

Z^1 and Z^2 are each, independently of one another, -CF₂O-, -OCF₂- or a single bond, where $Z^1 \neq Z^2$,

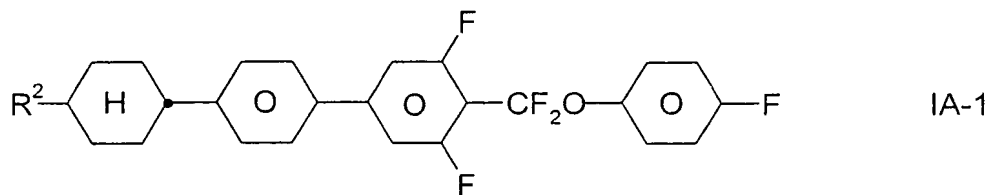
a is 0 or 1, and

 and  are each, independently of one another,

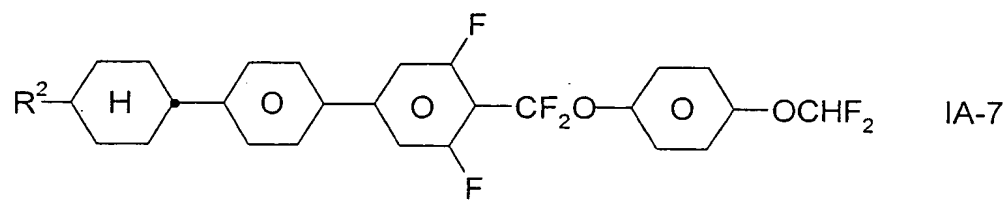
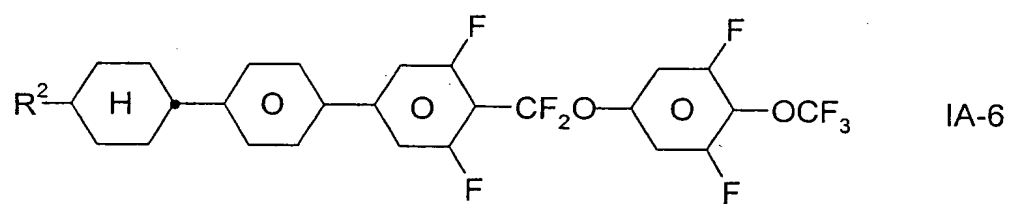
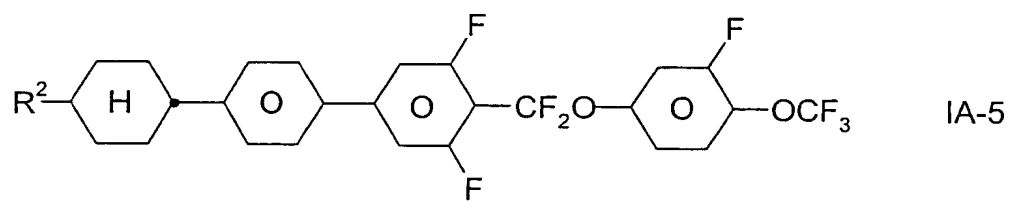
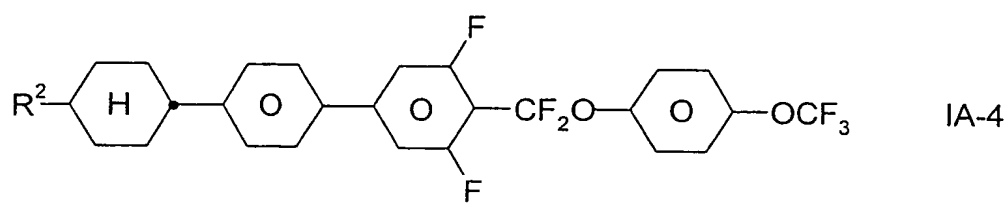
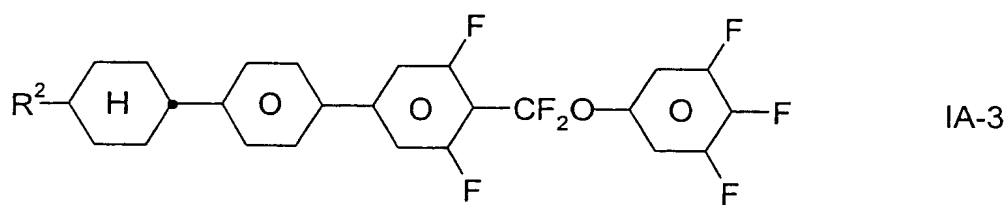
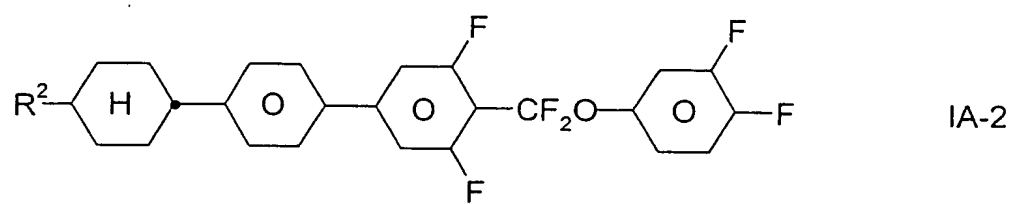


L^{1-4} are each, independently of one another, H or F.

2. Liquid-crystalline medium according to Claim 1, characterised in that it comprises one, two or more compounds of the formulae IA-1 to IA-30

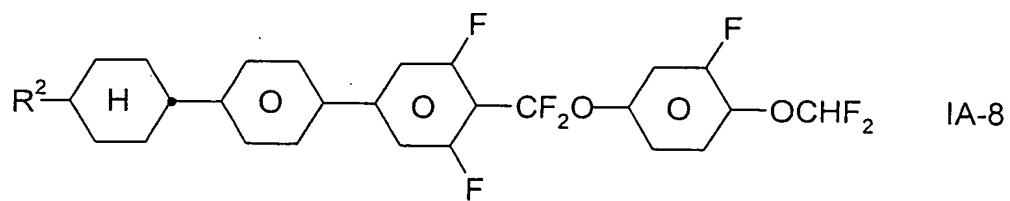


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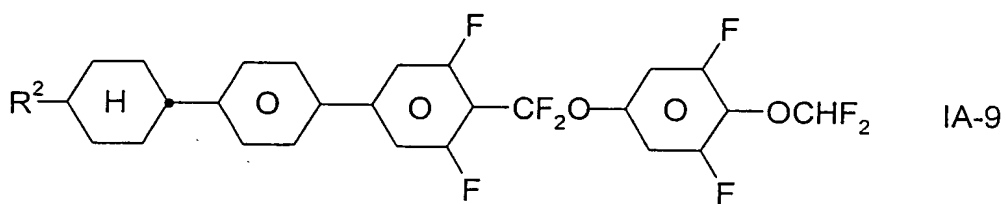


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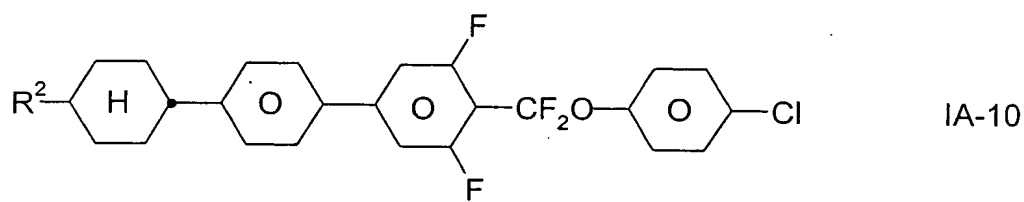
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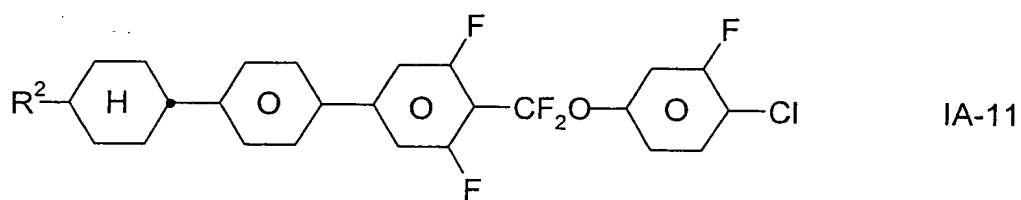
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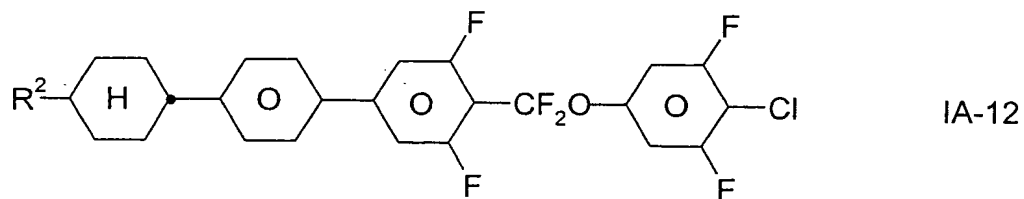
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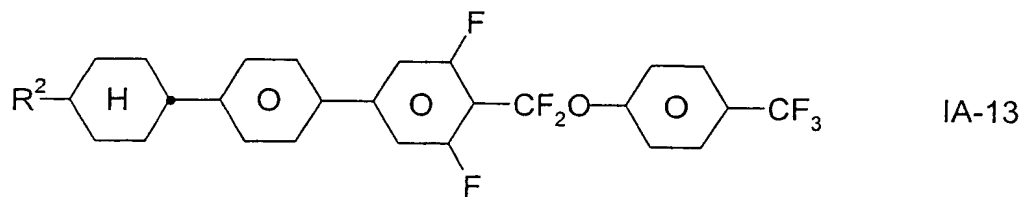
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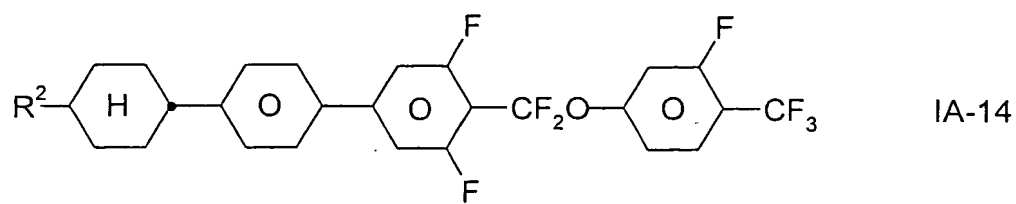
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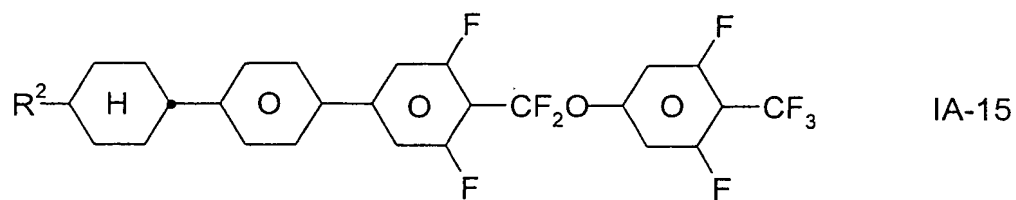
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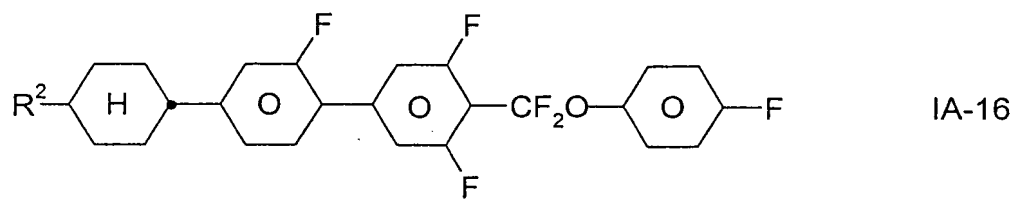
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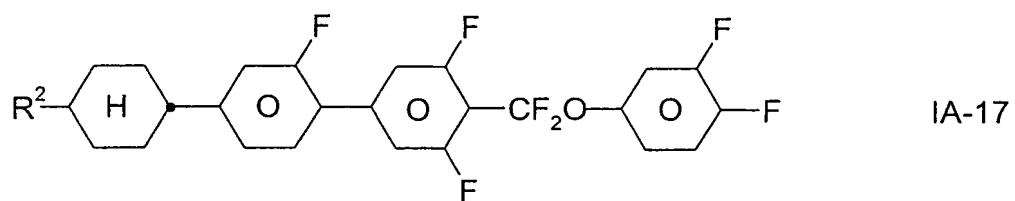
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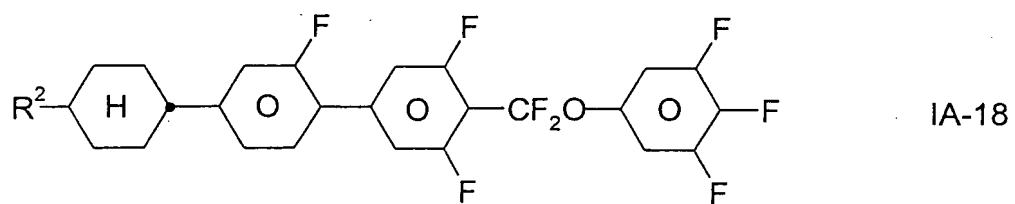
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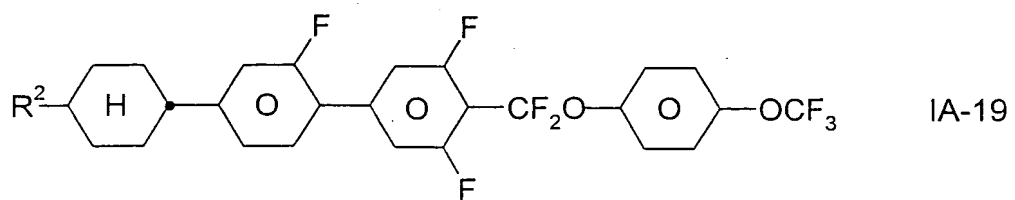
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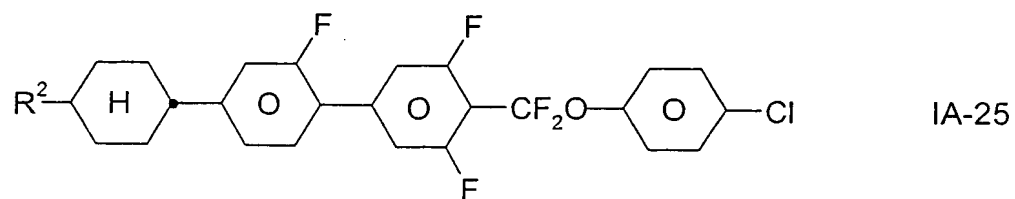
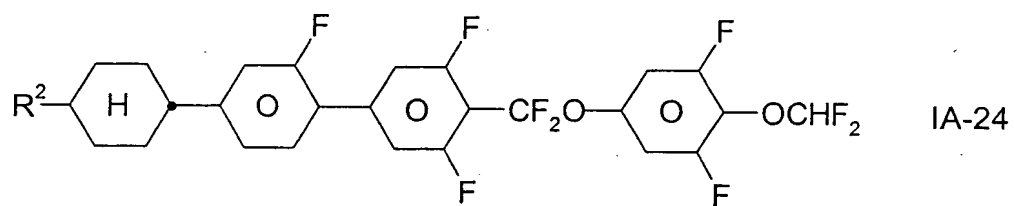
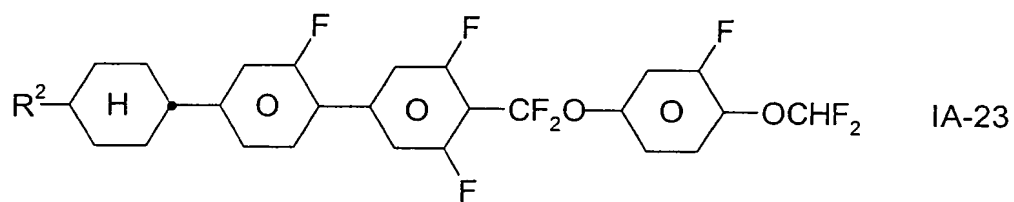
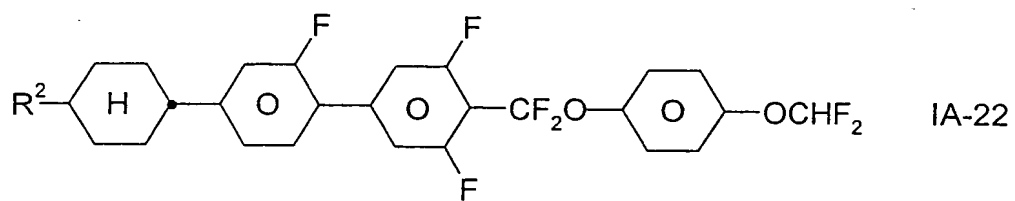
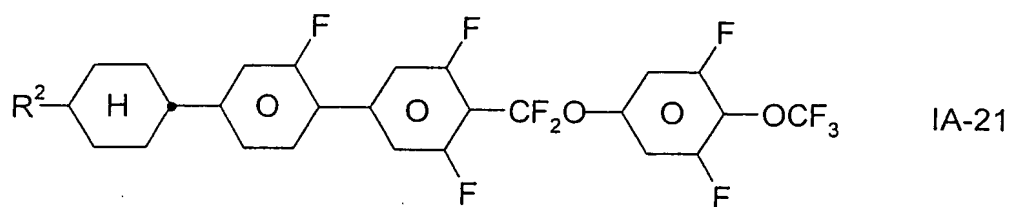
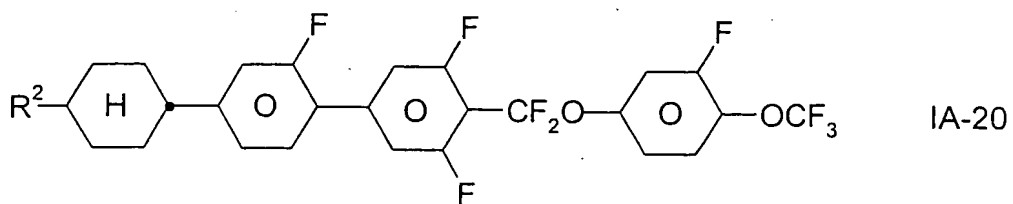
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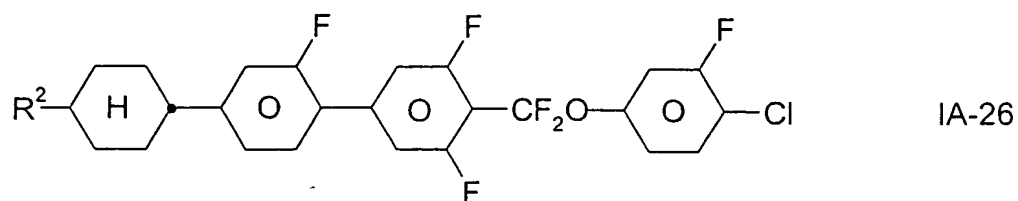
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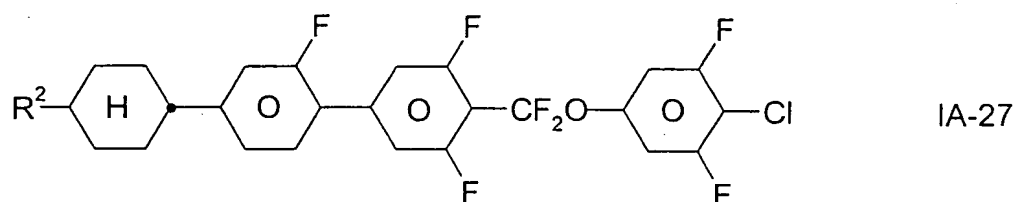
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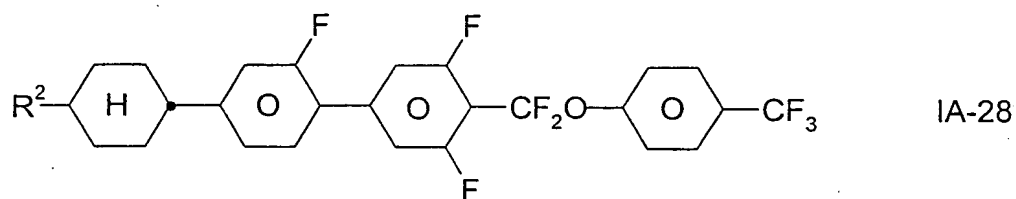
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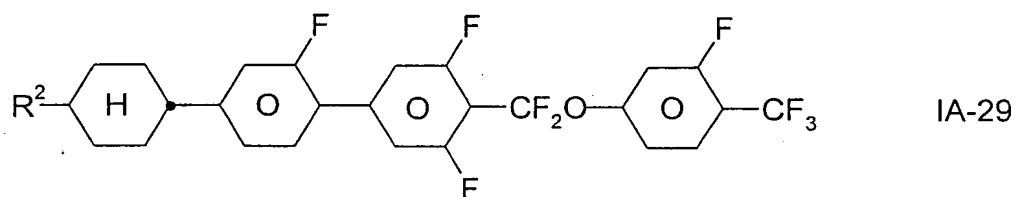
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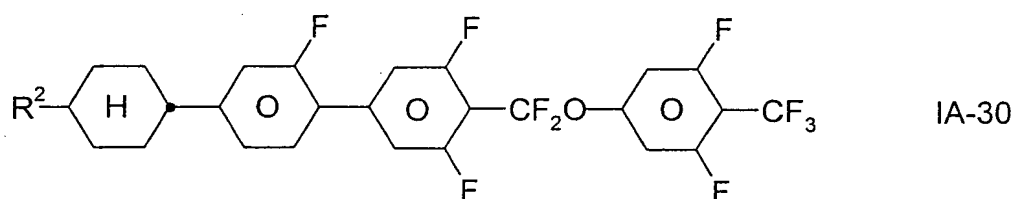
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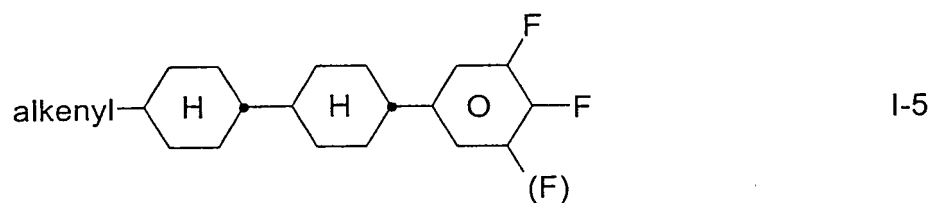
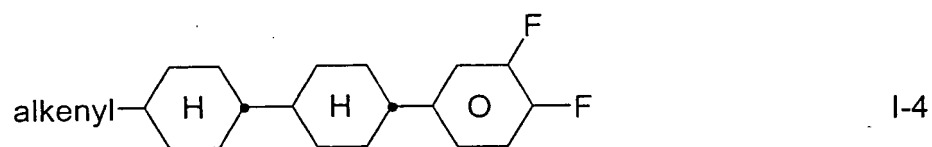
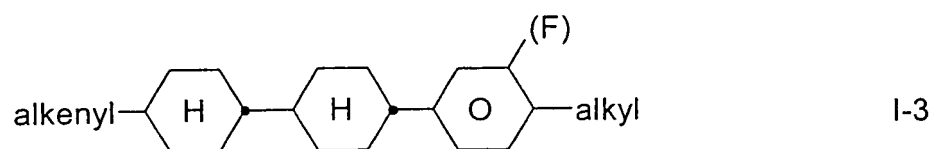
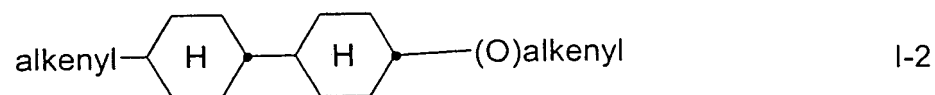
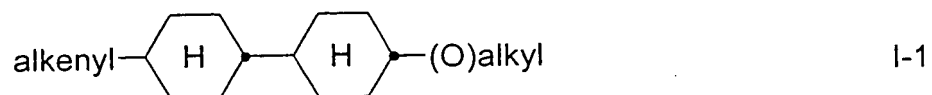
in which R² is as defined in Claim 1.

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3. Liquid-crystalline medium according to Claim 1 or 2, characterised in that it comprises one or more compounds of the formulae I-1 to I-5

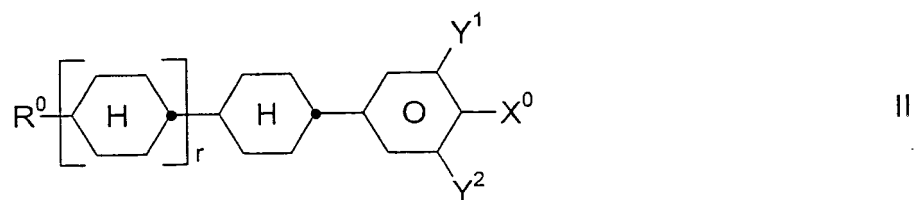
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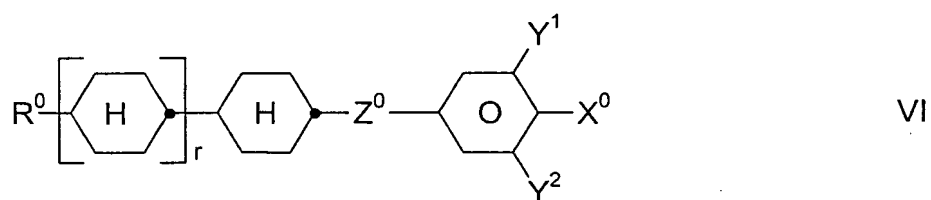
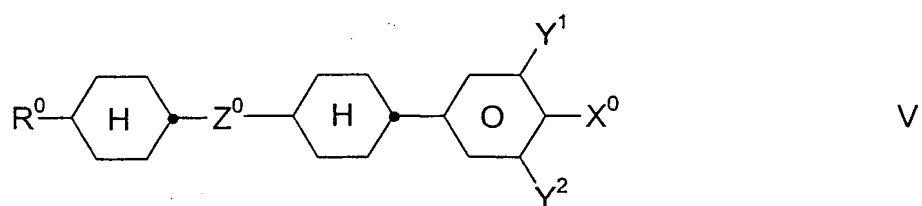
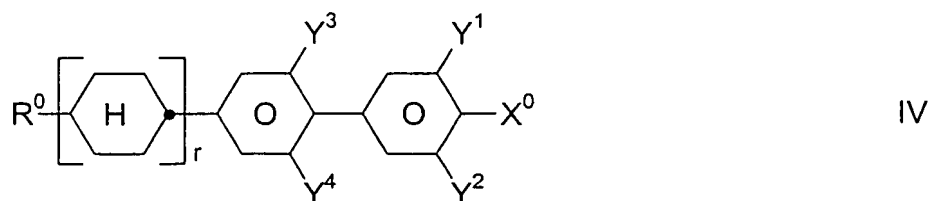
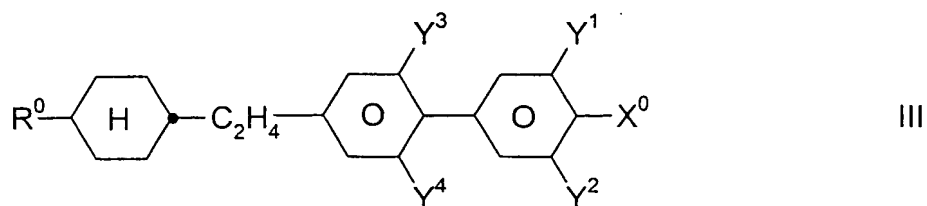


in which alkenyl is an alkenyl radical having from 2 to 8 carbon atoms and alkyl is a straight-chain alkyl radical having 1-15 carbon atoms.

4. Liquid-crystalline medium according to one of Claims 1 to 3, characterised in that it additionally comprises one or more compounds selected from the group consisting of the general formulae II, III, IV, V and VI



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in which the individual radicals have the following meanings:

R^0 is H, n-alkyl, alkoxy, oxaalkyl, fluoroalkyl, alkenyloxy or alkenyl, each having up to 9 carbon atoms,

X^0 is F, Cl, halogenated alkyl, alkenyl, alkenyloxy or alkoxy having up to 6 carbon atoms,

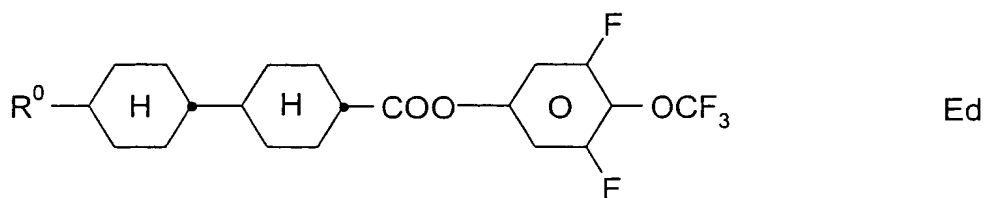
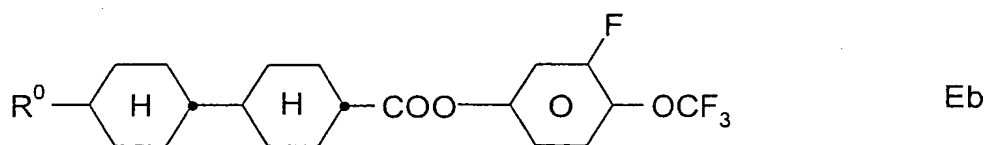
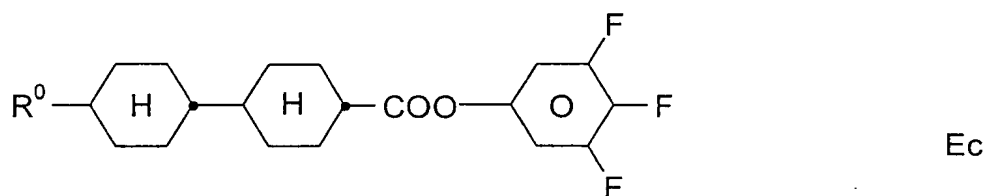
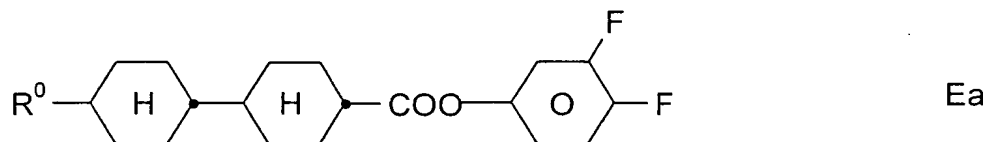
Z^0 is $-C_2F_4-$, $-CF=CF-$, $-CH=CF-$, $-CF=CH-$, $-C_2H_4-$, $-CH=CH-$, $-O(CH_2)_3-$, $-(CH_2)_3O-$, $-(CH_2)_4-$, $-CF_2O-$, $-OCF_2-$, $-OCH_2-$ or $-CH_2O-$,

Y^{1-4} are each, independently of one another, H or F,

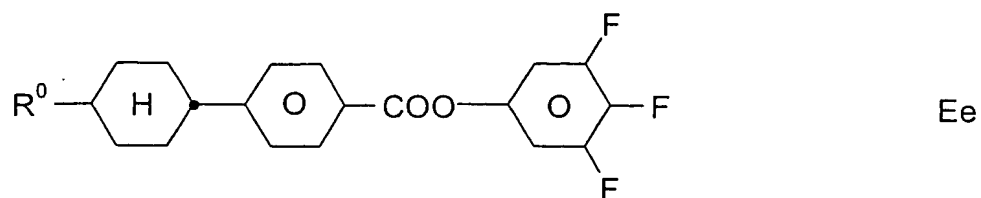
r is 0 or 1,

and the compound of the formula II is not identical with the compound of the formula I.

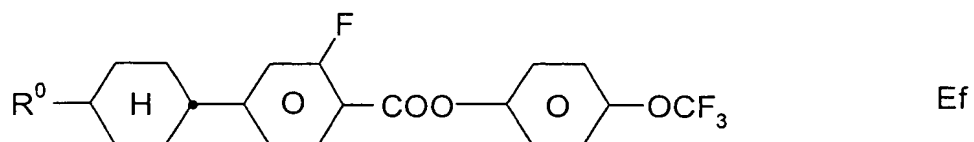
5. Liquid-crystalline medium according to Claim 4, characterised in that the proportion of compounds of the formulae IA and I to VI together in the mixture as a whole is at least 50% by weight.
6. Liquid-crystalline medium according to one of Claims 1 to 5, characterised in that it additionally comprises one or more compounds of the formulae Ea to Ef



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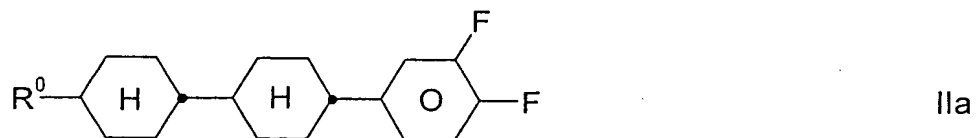


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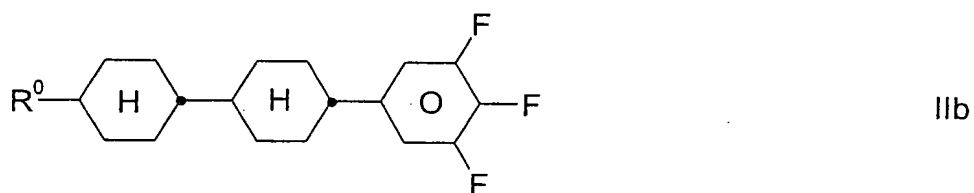
in which R^0 is as defined in Claim 4.

7. Liquid-crystalline medium according to one of Claims 1 to 6,
characterised in that it comprises one or more compounds of the for-
mulae IIa to IIg

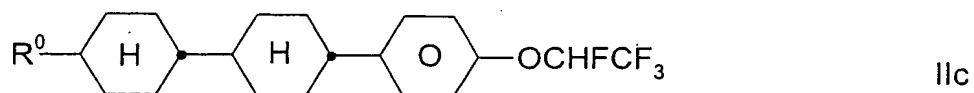
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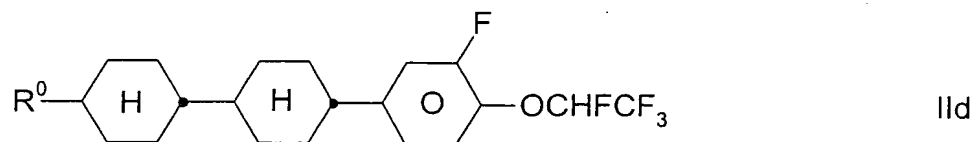
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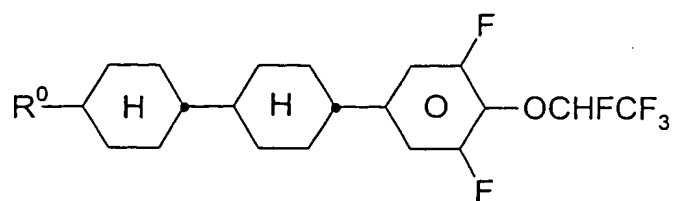


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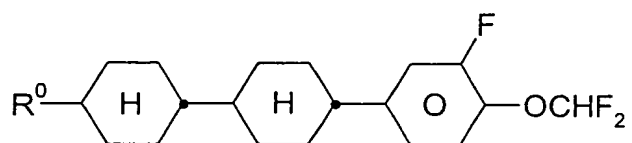
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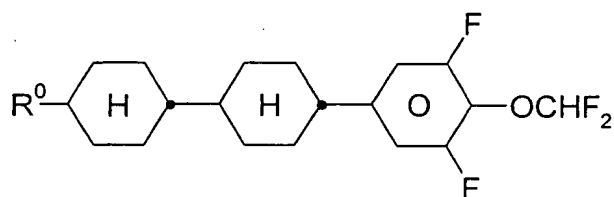
IIe

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IIIf

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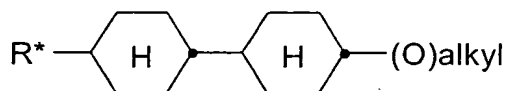
IIg

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in which R^0 is as defined in Claim 4.

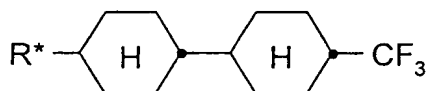
8. Liquid-crystalline medium according to one of Claims 1 to 7, characterised in that it additionally comprises one or more compounds of the formulae RI to RVII

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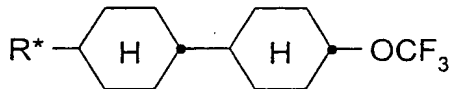
RI

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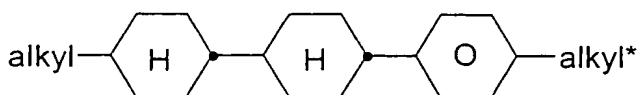


RII

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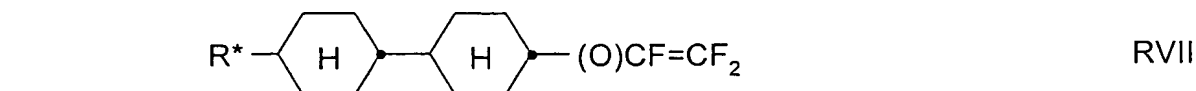
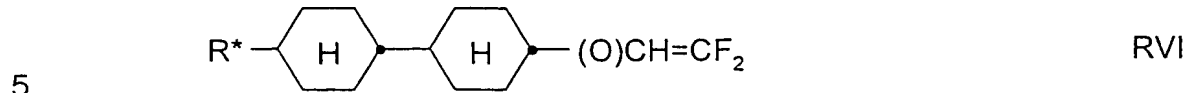


RIII



RIV

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in which

R* is n-alkyl, alkoxy, oxaalkyl, fluoroalkyl or alkenyloxy, each having up to 9 carbon atoms, and

alkyl and alkyl* are each, independently of one another, a straight-chain or branched alkyl radical having 1-9 carbon atoms.

9. Liquid-crystalline medium according to one of Claims 1 to 8, characterised in that the proportion of compounds of the formula IA in the mixture as a whole is from 5 to 40% by weight.

10. Use of the liquid-crystalline medium according to Claim 1 for electro-optical purposes.

11. Electro-optical liquid-crystal display containing a liquid-crystalline medium according to Claim 1.